

SUMMARY

This environmental assessment (EA) has been prepared to analyze the environmental consequences resulting from the future disposition of certain flood retention structures built in the wake of the Cerro Grande Fire within the boundaries of Los Alamos National Laboratory (LANL). In May 2000, a prescription burn, started on Federally-administered land to the northwest of LANL, blew out of control and was designated as a wildfire. This wildfire, which became known as the Cerro Grande Fire, burned approximately 7,650 acres (3,061 hectares) within the boundaries of LANL before it was extinguished. During the fire a number of emergency actions were undertaken by the Department of Energy (DOE), National Nuclear Security Administration (NNSA) to suppress and extinguish the fire within LANL; immediately thereafter, NNSA undertook additional emergency actions to address the post-fire conditions. Due to hydrophobic soils (non-permeable soil areas created as a result of very high temperatures often associated with wild fires) and the loss of vegetation from steep canyon sides caused by the fire, surface runoff and soil erosion on hillsides above LANL were greatly increased over pre-fire levels. The danger to LANL facilities and structures and homes located down-canyon from the burned area was magnified.

NNSA constructed certain flood and sediment detention structures in the wake of the Cerro Grande Fire as part of its emergency response actions. These structures were built to address the changes in local watershed conditions that resulted from the fire. The long-term disposition of these structures was not considered as a part of the decision to undertake the construction actions. Watershed conditions are expected to return to a pre-fire status or approximate the pre-fire condition over the next three to eight years. NNSA needs to take actions regarding the disposition of these structures when they are no longer necessary to protect LANL facilities and the businesses and homes located downstream. The structures that are addressed in this EA are 1) a flood retention structure (FRS) constructed of roller compacted concrete located in Pajarito Canyon; 2) a low-head weir, constructed of rectangular rock-filled wire cages (gabions), and associated sediment detention basin in Los Alamos Canyon; 3) reinforcements of four road crossings, including a land bridge along Anchor Ranch Road in Two-Mile Canyon and State Road 501 embankment reinforcements at Two-Mile Canyon, Pajarito Canyon, and Water Canyon; and 4) a steel diversion wall upstream of Technical Area (TA) 18 in Pajarito Canyon.

The Proposed Action is to remove part of the above ground portion of the FRS, including gabions that are currently being installed along the downstream channel. Design studies would be performed at the time of removal to determine the channel width needed and the required slope. At the end of the partial FRS removal, the streambed would be graded, the remaining sides of the FRS would be stabilized, and the banks would be reseeded. In addition, the Proposed Action would also include removal of the access road in order for that part of the canyon wall to be recontoured and stabilized if TA-18 facilities remain in place; if TA-18 facilities are relocated, this access road might remain in place. The area would be monitored and maintained to prevent erosion of the slopes and damage to the floodplain and downstream wetlands. The Proposed Action also includes removal of the entire above ground portions of the steel diversion wall at TA-18. Any removal of the two identified structures would not occur until after the Pajarito watershed has returned to pre-fire conditions, or the location ecosystem has recovered enough to approximate a pre-fire condition. The Proposed Action would leave the other subject structures in place with continued performance of routine maintenance activities.

A second alternative analyzed the Disassembly Of All Structures Alternative. Under this alternative, NNSA would remove all of the above ground portion of the FRS, the low-head weir and detention basin, the road reinforcements and the entire above ground portions of the steel diversion wall.

The No Action Alternative was also considered. Under this alternative NNSA would leave the FRS and the steel diversion wall at TA-18 intact and continue inspection and maintenance activities. The steep embankment remaining at the FRS from the No Action Alternative would also require continued maintenance for erosion control. In addition, if structural or stability problems of the FRS were to be detected, DOE would make a decision on repair or disposition of the FRS at that time and additional National Environmental Protection Agency compliance reviews would be needed. The No Action Alternative for the other subject structures would be the same as for the Proposed Action.

The subject flood and sediment detention structures are located within floodplains. Under the Proposed Action, removal activities for the FRS and steel diversion wall would require the placement of best management practices (BMPs) involving storm water storm controls in accordance with the Storm Water Pollution Prevention Plan, which is required by the LANL National Pollution Discharge Elimination System permit. The BMPs would be placed at the FRS and the steel diversion wall before demolition activities begin. Most of the debris generated by the Proposed Action would be recycled for future use in construction projects at LANL. Effects from waste disposal would be minor as the remaining non-recyclable waste would be disposed of at existing landfills that have the capacity to accept waste. Demolition activities for the two identified structures are expected to produce only temporary and localized air emissions. There would also be temporary periods of short-term increases in nitrogen oxide emissions due to the use of heavy equipment and vehicles. The Proposed Action could have short-term effects on the floodplains. Temporary BMPs would be implemented to prevent or minimize any adverse effects. There could be a minor effect on biological resources, although adherence to the LANL Habitat Management Plan would minimize adverse effects. Controlled demolition and proper removal actions, including BMPs, would be put in place to preserve water quality during actual demolition activities. Long-term site stabilization at each of the subject structures would help protect surface and groundwater quality. The Proposed Action is expected to have only minor short-term and temporary effects on current traffic patterns. Implementation of the Proposed Action would not affect the geology of the structural sites, any known cultural resources, and is not expected to result in an adverse effect on noise or the health of demolition maintenance workers or the public.